

AMENDMENTS TO THE CLAIMS

Please amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1.(Previously presented) A method for managing a data storage system that includes primary and secondary storage subsystems, including respective first and second non-volatile storage media, the method comprising:

maintaining a record of locations to which data are expected to be written on the primary storage subsystem by a host processor, as indicated by a predetermined prediction algorithm based on the locations to which the data have already been written;

receiving the data from the host processor at the primary storage subsystem to be written to a specified location on the first non-volatile storage media;

if the specified location is not included in the record, updating the record using the prediction algorithm so that the record includes both the specified location and one or more further locations that have not yet been specified by the host processor;

outputting an acknowledgment to the host processor to indicate that the data have been stored in the data storage system after receiving the data and after updating the record if the specified location was not included in the record prior to updating the record;

copying the data from the primary storage subsystem to the secondary storage subsystem so as to create a mirror on the secondary storage subsystem of the data received by the primary storage subsystem;

storing the data in the specified location on both the first and second non-volatile storage media; and

upon recovery of the system from a failure of the primary storage subsystem, conveying, responsively to the record, a portion of the data from the secondary storage subsystem to the primary storage subsystem for storage on the primary storage subsystem.

2. (Original) The method according to claim 1, wherein copying the data

comprises transmitting the data between mutually-remote sites over a communication link between the sites.

3. (Canceled)

4. (Previously presented) The method according to claim 1, and comprising, upon occurrence of a failure in the primary storage subsystem, configuring the secondary storage subsystem to serve as the primary storage subsystem so as to receive further data from the host processor to be stored by the data storage system.

5. (Canceled)

6. (Original) The method according to claim 1, wherein maintaining and updating the record comprise marking respective bits in a bitmap corresponding to the locations to which the data are to be written on the first and second non-volatile storage media.

7. (Original) The method according to claim 1, wherein maintaining the record comprises storing the record on the first non-volatile storage media, and wherein updating the record comprises modifying the record that is stored on the first non-volatile storage media.

8. (Original) The method according to claim 7, wherein modifying the record comprises:

comparing the specified location to a copy of the record held in a volatile memory on the primary storage subsystem;

modifying the copy of the record so that at least the specified location is included in the copy of the record; and

destaging the modified copy of the record to the first non-volatile storage media.

9. (Original) The method according to claim 8, wherein the record is not modified on the first non-volatile storage media responsively to receiving the data as long as the specified location to which the data are to be written is included in the record.

10. (Original) The method according to claim 7, wherein modifying the record comprises adding a plurality of locations, including the specified location, to the record.

11. (Original) The method according to claim 1, wherein updating the record comprises predicting one or more further locations to which the host processor is expected to write the data in a subsequent write operation, and adding the one or more further locations to the record.

12. (Original) The method according to claim 11, wherein predicting the one or more further locations comprises selecting a predetermined number of consecutive locations in proximity to the specified location.

13. (Original) The method according to claim 11, wherein maintaining the record comprises recording the locations to which the data are written using an object-based storage technique, and wherein predicting the one or more further locations comprises choosing the one or more further locations based on a logical connection between storage objects.

14. (Original) The method according to claim 1, wherein updating the record comprises removing one or more locations, other than the specified location, from the record, so as to limit a size of the record.

15. (Original) The method according to claim 14, wherein removing the one or more locations comprises receiving an acknowledgment from the secondary storage subsystem that the data have been stored in the one or more locations on the second non-volatile storage media, and removing the one or more locations from the record responsively to the acknowledgment.

16. (Previously presented) The method according to claim 14, wherein removing the one or more locations comprises identifying the locations at which the first and second non-volatile storage media contain identical data, and selecting for removal one of the identified locations that was least-recently added to the record.

17. – 48. (Cancelled)